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Poland:
Economic Stagnation Ahead [redacted] 25X1

A Research Paper

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EUR 86-10019
July 1986

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Economic Stagnation Ahead (

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A Research Paper

This paper was prepared by
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are welcome and may be directed to the Chief,
Quantitative Analysis Group, East European Division,
EURA

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Scope Note

The analysis in this paper is based on an econometric model described in DI Technical Intelligence Report EUR 84-10046 (Confidential), April 1984, *POLGNP: A Detailed Model of Polish GNP*. POLGNP determines the resource costs and, thus, the feasibility of Polish economic recovery—especially the ability of the economy to reduce its dependence on imports. The model is designed to project the effects of technological adjustments and structural shifts in the economy on requirements for the factors of production—capital, labor, energy, and imports. The model can then measure the trade-offs between domestic production, soft currency imports, and hard currency imports. Tables in the appendix to this paper summarize POLGNP's projections for productivity and import requirements under alternative scenarios for consumption, investment, and exports in the late 1980s. 25X1

Poland: Economic Stagnation Ahead (

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Key Judgments

Information available as of 1 May 1986 was used in this report.

Poland's recovery from its economic crisis of the early 1980s has stalled, and prospects for sustained improvement over last year's disappointing performance appear slim for the rest of the decade. As a result, Warsaw, Western creditors, and the USSR will find no escape from the dilemma posed by Poland's economic weaknesses:

- Failure to meet consumer demands with increased supplies will leave the Jaruzelski regime saddled with a sullen and unproductive labor force. Although the regime's use of force and intimidation may maintain a superficial calm, continued economic problems will erode the more enduring political stability that the regime is seeking.

- Even under optimistic assumptions about Poland's hard currency trade performance, Warsaw will make little progress in meeting its financial obligations. Western creditors face more years of debt reschedulings, missed payments, and pleas for new credits from the Poles.

- The USSR will have to continue providing substantial assistance if it wants to stave off economic decline in Poland.

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To sustain economic recovery, in our view, Warsaw must do three things:
- Increase consumption to provide incentives for improved worker performance and to ease social tensions.
- Increase investment to expand productive capacity and to lessen dependence on hard currency imports.
- Improve hard currency export performance to restore some semblance of creditworthiness.

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The dilemma facing Poland, however, is that an attempt to meet any one of the requirements conflicts fundamentally with the other objectives. Moreover, Moscow's demand for elimination of Poland's trade deficit with the USSR may limit the resources available to increase consumption, investment, and hard currency exports.

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Poland has given Western creditor governments its blueprint for dealing with these problems in its "Program for Improving the State of Poland's Economy." The program projects annual increases in GNP of nearly 4 percent during the period 1986-90. It emphasizes growth in investment and exports but allows for a modest increase in per capita consumption as well. The key provisions of this program—with growth rates scaled back—have been incorporated into Poland's 1986-90 economic plan.

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Our analysis using the POLGNP econometric model indicates that Poland cannot meet the Recovery Program targets for both economic growth and foreign trade balances. In our view, Polish planners have underestimated popular pressures for large increases in consumption, the amount of investment needed to modernize the capital stock, and the economy's need for energy and high-quality materials. Poland must overcome all these constraints to achieve the program's targets, but our model indicates this would require a much higher level of imports than the program projects. Whereas the Recovery Program calls for hard currency imports to grow only 4.5 percent and for soft currency imports to increase by 3.5 percent annually in 1986-90, we project these requirements at 7.5 and 6.5 percent, respectively. Unless imports grow at a more rapid rate than Warsaw projects, Poland will be unable to achieve simultaneously its basic objectives of moderately rapid economic growth, restoration of at least minimum creditworthiness with the West, and balanced trade with the USSR. Under the Recovery Program's growth targets, our model projects that:

- The hard currency trade surplus would increase from $1.1 billion in 1985 to only $1.8 billion by 1990, short of the Poles' goal of a $2.1-2.7 billion surplus.
- Poland's soft currency deficit would rise from approximately 650 million rubles in 1985 to 1.1 billion rubles by 1990. This would run counter to the goal of balanced soft currency trade by 1988 and a surplus by 1990 that was set in the Polish-Soviet trade protocol for 1986-90.

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Thus, we do not see the Recovery Program as a workable approach to Poland's major economic problems. The Poles will not be able to meet their growth targets unless Western creditors and the Soviets temper their demands for net resource flows from Poland. The unwillingness of the West and the USSR to finance a large net flow of imports for Warsaw will hold Polish economic growth well below the program's goal. Yet foreign creditors also face a limit on the amount of resources that can be squeezed out of the Polish economy.

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Our model's analysis indicates that economic growth will probably average 1 to 2 percent annually between now and 1990. This would prevent a deterioration in the Polish standard of living, but it would not provide the gains in consumption desired by the Polish people. At this rate of economic growth, the hard currency surplus could increase to $3.5 billion by 1990—sufficient to halt the growth of the debt by covering interest payments but not enough for debt repayments. This seems the maximum amount of debt service payments Western creditors can expect. Efforts to extract more would slow GNP growth below 1 percent but would add little to the trade surplus because savings on imports would diminish. If creditors are willing to accept less, Polish growth could rise above 1 to 2 percent. The hard currency surplus would contract rapidly, however, because import needs would rise much faster than GNP.

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In contrast to the West, the USSR cannot stem—much less reverse—the net flow of resources to Poland without risking serious damage to the Polish economy. Furthermore, slow growth could even widen Warsaw's deficit with the USSR by limiting Poland's capacity to expand soft currency exports while soft currency import needs would continue to rise. Cutting back deliveries to Poland would not benefit the USSR because it would depress Polish export capacity and could well risk economic collapse. Even if Moscow can force the Poles to redirect some exports from the West to the USSR, the Soviets probably will continue putting more into Poland than they will get back. 25X1

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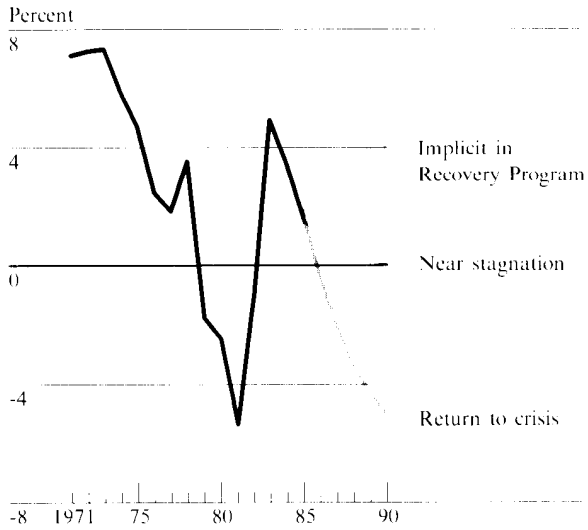
Introduction

Poland has experienced wide swings in economic performance over the past 15 years (figure 1). GNP growth, which had averaged 6.5 percent per year in the period 1971-75, dipped to 2.6 percent annually in 1976-78. Dislocations stemming from the rise of Solidarity and Warsaw's financial crisis combined to force average annual declines of 2.6 percent in 1979-82. Exceptional weather for agriculture and improved labor discipline helped the economy regain some lost ground as GNP increased by 4.9 percent in 1983, 3.4 percent in 1984, and 1.6 percent in 1985. Nonetheless, in per capita terms, GNP in 1985 was back only to the level achieved a decade ago.

Performance of the Polish economy in the second half of the 1980s will be closely watched by the USSR and the West. Both sides will monitor the risks of renewed political instability that could result from a further decline in living standards. In addition, Moscow wants to reduce the burden of its economic support to Poland and perhaps even press Warsaw to begin repaying past aid while assuming more of the costs of participating in the Warsaw Pact and the Council for Mutual Economic Assistance (CEMA). Western banks and governments will be looking for improvement in Poland's ability to service its hard currency debt.

Economic and political shocks suffered by Poland in recent years complicate an assessment of its prospects for economic recovery.[1] Warsaw is caught between economic imperatives best accommodated by rapid economic growth and constraints that threaten long-term stagnation. This paper reviews Poland's economic problems and evaluates Warsaw's Recovery Program as a means of resolving those problems during

Figure 1
Poland: Growth of GNP, 1971-90



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the next five-year plan period (1986-90). It examines the constraints that could thwart economic recovery, our forecasted outcome, and implications for the Soviet Bloc and the West.

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Economic Imperatives

Warsaw must come to grips with three economic imperatives over the next five years if it is to achieve economic recovery and political stability: increasing consumption, expanding investment, and enlarging its surplus in hard currency trade. The regime cannot postpone dealing with any of these needs in favor of

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the others. The dilemma, however, is that trying to meet any of the requirements conflicts fundamentally with the other objectives.

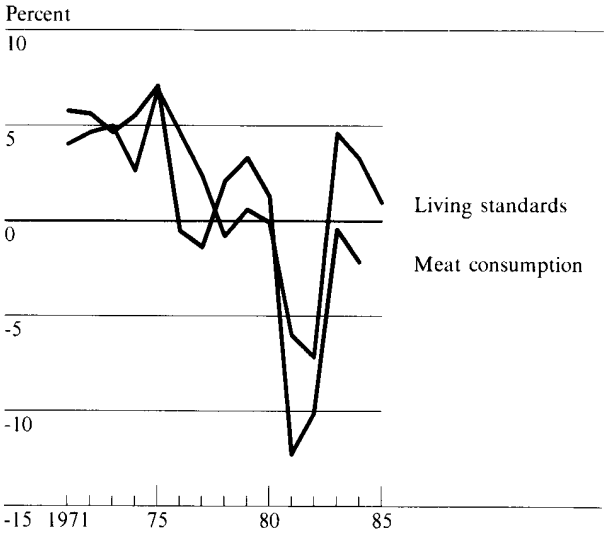
Consumption and Living Standards

We believe that improvements in personal consumption are essential to easing social tensions and improved labor productivity. Living standards declined during the period 1978-82 with the economic crisis and austerity measures imposed under martial law. In 1983-85, the regime backed off from its austerity program, giving priority to consumer goods supplies. But the increase in consumer goods did not keep up with increases in real wages, thus producing a buildup of unused purchasing power. This pent-up demand, if not met with increased supplies of consumer goods, will result in rapid inflation or more extensive rationing and queues, further eroding worker morale.

To achieve maximum payoff from raising consumption, Warsaw needs to emphasize food availability ahead of other goods and services. Per capita food consumption declined 15 percent in 1981-83 and recovered only 3 percent by 1985. Meat consumption per capita did even worse, dropping 23 percent in 1981-84 and recovering only 4 percent in 1985 (figure 2). Per capita consumption of other goods and services (excluding housing) fared better, declining by 12 percent in 1981-82 but rebounding by 13 percent in 1983-85.

The sharp decline in food supplies helps to explain why the Polish people have not perceived an improvement in living standards despite the statistical rebound in consumption. In market economies with eroding living standards, the public has more scope to distribute cuts in consumption as they see fit; consumers tend to defer purchases of durables first, luxuries next, and then nondurables. Food is cut last and, as a result, accounts for a growing share of a smaller basket of consumer goods. In Poland's case, however, because of the dependence of food production on increasingly scarce imports, outlays on food declined from more than 40 percent of consumer budgets in 1970-82 to less than 36 percent in 1984 and 1985.

Figure 2
Poland: Change in Per Capita Living Standards and Meat Consumption, 1971-85



Investment

Poland needs to increase investment—in sectors that exploit its comparative advantage—both to expand productive capacity and to lessen dependence on hard currency imports. Poland's capital stock continued to grow during the economic decline of 1979-82, but this resulted from slashing retirement rates in half to offset sharp reductions in new investment. A growing share of plant and equipment thus is obsolete and must be replaced. This problem was aggravated by the decision of Polish planners to focus investment cutbacks on sectors vital to capital modernization in order to protect shortrun consumption. In 1979-83 the percentage reduction in investment in the "productive sphere" was almost twice the reduction in the "consumption sphere."[2] In addition, much of Poland's

[2] "Productive sphere" refers to the producer goods sphere—those sectors that produce mostly machinery, equipment, and structures for investment. The "consumption sphere" includes those sectors that produce mostly for consumption, both private and social.

capital stock has been idle—as much as 40 percent in some sectors—because of poorly conceived investment commitments from the 1970s. Much of this unused capacity consists of Western machinery that needs parts and materials that Poland can no longer afford to import.

The Hard Currency Trade Balance

Poland must achieve a growing surplus in hard currency trade to restore some semblance of creditworthiness. Since 1981, Warsaw has run trade surpluses large enough to cover the most immediate demands of creditors but insufficient to meet all interest payments, let alone repayment of principal. While Poland will continue to need reschedulings of principal for the foreseeable future, the regime must cover interest payments and balance its current account for several years before creditors will resume lending on the scale needed to increase Poland's import capacity significantly.

The gains in hard currency trade since 1981 have resulted mainly from cuts in imports. The reductions fell largely on investment goods to minimize the immediate impact on production and consumption. But Warsaw must rescind these cuts to sustain growth in output, investment, and consumption over the longer term. To afford more imports and increase its debt servicing capacity, Poland would need to generate substantial growth in hard currency exports.

The Soft Currency Trade Deficit

Poland is also under pressure to reduce its soft currency trade deficit with socialist trading partners. This deficit peaked at 1.8 billion rubles in 1981 when Poland's economic crisis prevented Warsaw from meeting its export commitments and forced the USSR and other East European countries to provide emergency assistance. The USSR shouldered most of this burden by accounting for 1.6 billion rubles of Warsaw's deficit. The revival of the Polish economy after 1982 permitted a reduction of the soft currency deficit to under 700 million rubles by 1985. The gain has largely benefited the non-Soviet CEMA countries with which the Poles ran a surplus of 335 million rubles last year. Moscow, on the other hand, has continued to provide economic assistance by allowing Warsaw to run trade deficits averaging 600 million rubles annually in 1982-85. 25X1

Moscow wants its economic relationship with Poland to be brought into balance in 1986-90. While Moscow will allow Warsaw to run trade deficits through 1987, the recently concluded Soviet-Polish trade protocol for 1986-90 calls for Poland to run surpluses in 1989-90 large enough to balance trade for the five-year period as a whole. Repayment of 5 billion rubles owed to the Soviets will be deferred until after 1990. (25X1 25X1

We do not treat reduction of soft currency deficits as an imperative for economic recovery in our analysis because failure to achieve this goal does not weaken Poland's growth prospects. On the contrary, the extent to which Warsaw responds to Moscow's demands may limit the resources available for increasing consumption, investment, and hard currency exports. 25X1 25X1

The Polish Recovery Program

In July 1984, Poland gave Western creditor governments a blueprint for dealing with its economic problems in its "Program for Improving the State of Poland's Economy." The key provisions of this so-called Recovery Program are reflected in the new five-year plan, but it is the 1984 Recovery Program that provides the details on which our analysis is based. This Recovery Program, on which we have full documentation, is probably an initial version of the Party Program for Economic Recovery. While we have little detail on the new program, 25X1 25X1 Like its 1984 predecessor, the 1986 draft program also calls for full recovery in Poland within five years. This new recovery program, the five-year plan, and subsequent adjustments to the plan are likely to be scaled back versions of the 1984 Recovery Program. 25X1 25X1

The 1984 Recovery Program calls for some fundamental shifts in priorities in 1986-90 from the policies in 1983-85. National income is to grow at an average annual rate of 4.2 percent[3]—below the 4.8-percent average attained in the 1983-85 revival. This target is still optimistic for a five-year postrecovery period given that 1985 growth was only 3 percent and the 1986 plan now calls for only 3.3-percent growth. Consumption gains would slow to allow an increase in investment and exports needed to improve Poland's external balance. The trade surplus with the West is projected to rise from $1.1 billion in 1985 to $2.1-2.7 billion in 1990. At the same time, the ruble trade deficit (essentially the trade balance with the USSR) is to fall from 600-700 million rubles in 1985 to near zero in 1988-90.

Our analysis indicates that, even under very optimistic assumptions, Poland cannot meet the Recovery Program targets for both economic growth and foreign trade balances. Any one of four constraints could restrict the rate of economic growth—the obsolete capital stock, the poorly motivated labor force, the economy's demand for energy, and the need for high-quality imported materials. Poland must overcome all these constraints to achieve the program's targets, but this would require a much higher level of imports than the program projects or than Poland can afford.

Obsolete Capital Stock

The Recovery Program calls for net investment to grow 8.9 percent annually in 1986-90—a substantial acceleration from the postcrisis rate of 6.7 percent in 1983-85. Our analysis, based on the POLGNP model, indicates that even this pickup in investment is inadequate to meet the economy's needs for modern plant and equipment, increased capacity in capital-short sectors, reduction of import dependence, and prevention of bottlenecks in such capital-intensive sectors as electric power, nonferrous metals, and transportation. We estimate that the capital stock would have to grow by 6 percent annually to meet the Recovery Program's projected annual 3.8-percent growth in GNP and its emphasis on heavy industry. This would require growth in net investment of 25 percent annually over the five-year period.

[3] This 4.2 percent in Marxist national income concepts is equivalent to 3.8 percent in Western GNP accounting.

POLGNP projects larger investment requirements because of its more pessimistic assumption about future capital productivity (figure 3). Capital productivity in Poland declined on average by 1.3 percent annually even in the growth years of 1971-78; during the crisis period of 1979-82, it fell by 7.1 percent per year. Capital productivity rebounded 3.3 percent in 1983-84. The Recovery Program is banking on continuing the reversal of this decadelong trend. While the program does not specify a capital productivity target, its investment projection and target for economic growth yield an implicit rise in capital productivity of 0.75 percentage point per year. Our model, by contrast, projects a decline in capital productivity of 2.0 to 2.1 percent per year under the Recovery Program's target for 1986-90. Even this is better than the average annual decline of 2.8 percent in 1971-83.

We are pessimistic about the trend in capital productivity because a sizable amount of investment continues to flow to wasteful projects. Although the economic reforms of 1982 tried to diminish the role of central planners in allocating resources and to impose efficiency criteria on enterprise investment decisions, little has changed in Poland's management of investment. The Poles plan to complete the backlog of unfinished projects even though many are large, capital intensive, and of questionable value. Because ministries and enterprises with a vested interest in the projects can exert a strong claim on resources, the projects are likely to be completed regardless of their high costs and doubtful benefits.

Past trends indicate that Warsaw will have to accelerate imports to achieve the needed expansion of capital stock. Nearly half of all investment during the boom of the early-to-middle 1970s consisted directly or indirectly of imports. The dependence on imports was about evenly split between socialist and nonsocialist countries. In the financial crisis period of 1979-82, both investment and hard currency imports fell sharply. In 1983-84, investment recovered impressively without massive injections of imports. But the recovery does not indicate a permanent reduction in the

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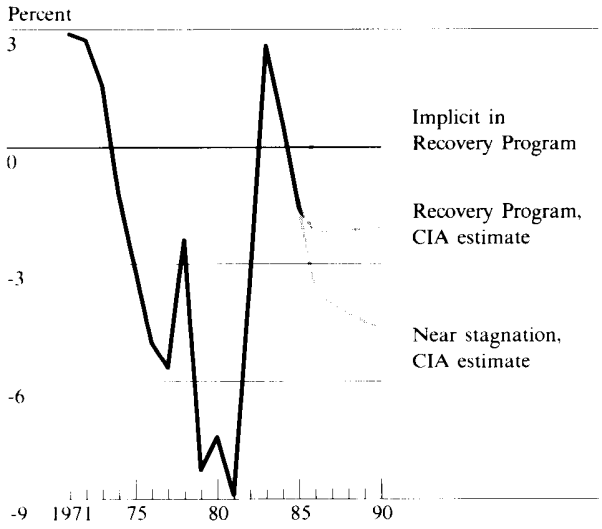
Figure 3
Poland: Growth in Capital Productivity, 1971-90



import content of investment. The recovery occurred mostly in those components of investment that are least import-dependent—construction and investment to support social consumption. The investment necessary to support rapid economic growth—machinery in key industrial sectors and transport—has been neglected, and these are the components of investment with the highest import content. Polish-built nonelectric machinery, for example, has an import content of 27 percent; transport equipment, 30 percent; and electrical equipment, 23 percent—roughly split 60 to 40 between hard currency and soft currency imports. The total import content of construction, in contrast, is only 15 percent.

The requirement for imports encompasses not only machinery and equipment but also parts, materials, and fuels used to produce capital goods domestically. Our input-output studies suggest that for every dollar of machinery and equipment imported for investment, an additional 40 cents is spent on imports to support investment goods production in Poland. Similarly, soft currency inputs for the domestic capital goods industry indirectly add 33 percent to the ruble import bill for machinery and equipment. 25X1

The additional investment needs projected by POLGNP and high import content of capital goods—both complete machinery and imported components for domestically produced machinery—yield an investment import bill substantially higher than that in the Recovery Program. The program assumes only a 4.5-percent average annual increase in total hard currency imports of machinery. Our calculations indicate that the Recovery Program would require hard currency machinery imports to rise 9.9 percent per year on average. By 1990 the annual bill would reach $2.5 billion in 1985 dollars compared with $1.3 billion in 1985. Polish hard currency machinery imports jumped 26 percent in 1985, indicating Poland's need to import Western machinery. 25X1

On the soft currency side, the Recovery Program calls for machinery imports to rise an average of 6.2 percent per year in 1986-90. Our calculations yield a growth rate of 8.4 percent with the annual bill rising to 6.2 billion rubles by 1990 compared with 4.2 billion rubles in 1985. Soft currency imports of machinery rose 16.9 percent in 1985. 25X1 25X1

Labor Productivity

The one major resource in ample supply in the Polish economy is labor. The number of workers required to fulfill the Recovery Program falls within the limits set by past labor participation rates applied to demographic projections (figure 4). The key issue affecting labor is whether the regime can deliver improvements in living standards sufficient to provide adequate incentives for improved productivity (figure 5). 25X1

Despite the importance of rising living standards, the Recovery Program suggests that authorities hope to get away with minimum growth in consumption. Total consumption—personal and government—would grow only 1.7 percent per capita, a rate below 25X1

Figure 4
Poland: Labor Supply and Requirements, 1986-90

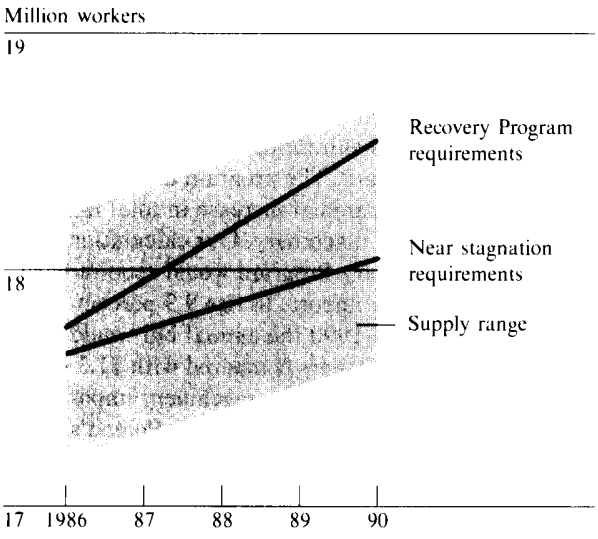
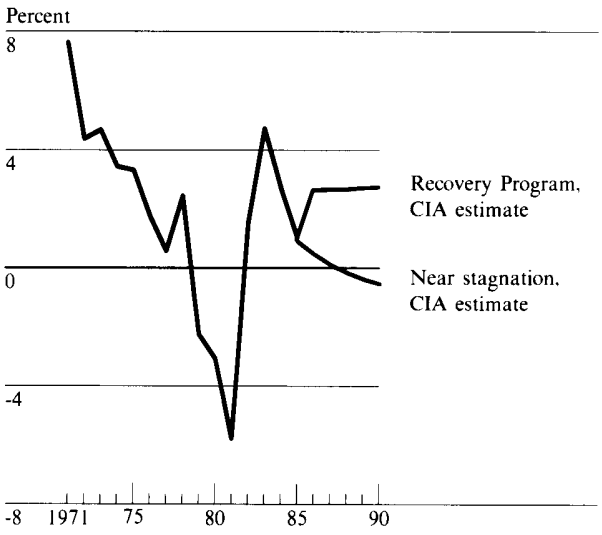


Figure 5
Poland: Growth in Labor Productivity, 1971-90



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the 2.6-percent annual average in 1983-85. The program does not specify growth by consumption category, but agriculture is slated to grow by only 1.5 percent per year. Since food exports to market economies are projected to increase by 8.8 percent per year, this leaves little room for increases in domestic consumption; we estimate planned growth in food consumption to be only about 0.5 percent annually. The program does specify a target for per capita meat consumption. By 1990 it is to reach 58.5 kilograms per capita—the same level as in 1982 but only 79 percent of the 1980 high. Per capita meat consumption was conspicuously omitted from the 1985 plan fulfillment report, and the Recovery Program gives only the 1990 target with no basis from which to calculate a growth rate.

The Recovery Program's consumption targets are consistent with past regime plans that typically called for slow growth of consumption in order to increase resources for investment and exports. This pattern reflects planners' preferences as well as an effort to convince foreign creditors that Warsaw is prepared to accept some austerity in order to improve its balance of payments. The plans, however, have subsequently been adjusted or abandoned under pressure from workers and consumers demanding larger increases in consumption. The regime remains wary of discontent over stagnant living standards and would probably try to boost consumption more than planned in the Recovery Program if this seemed necessary to maintain political stability.

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In addition to underestimating pressures for greater consumption, the Recovery Program is probably overestimating growth in supplies, particularly of food. Although modest, the 1.5-percent growth rate for agriculture comes off a very high base as a result of exceptionally good weather in 1983-85. Even a couple of years of average weather could reduce growth in agriculture to near zero. Moreover, the regime continues to limit the investment and incentives needed to

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improve performance in the largely private agricultural sector. For political and ideological reasons, Warsaw remains reluctant to ensure adequate resources and income for private farmers.

The questionable projections for growth in consumption and food output cast doubt on the Recovery Program's targets for improving Poland's food trade balance. Rapid growth of consumption and poor agricultural performance produced sharp increases in food imports in the late 1970s. By 1981 imports of food products accounted for 35 percent of imports from nonsocialist countries while nonfood items to support domestic food production accounted for an additional 14 percent of nonsocialist imports. Above-average crops and martial-law era austerity enabled Warsaw to make deep cuts in agricultural imports and to turn its food trade balance from a $1.4 billion deficit in 1981 to a $73 million surplus in 1983. Agricultural purchases bore the brunt of the reduction in hard currency imports forced by Warsaw's financial crisis, falling to 15 percent of nonsocialist imports by 1983.

More recently, however, demands for more consumption have led the regime to make unplanned imports of meat and to divert some domestic production earmarked for export to the domestic market. A return to the situation of the late 1970s seems possible—within the limits of Poland's financial capabilities—given the dependence of food consumption on imports, the regime's inability to resist pressures for increased consumption, and the reluctance to devote adequate investment to food production and processing.

Instead of expanding food consumption, Warsaw could meet the population's expectation of better living standards and hold down imports by improving the supply of housing. Housing, which grew only 2.1 percent per year during 1983-85, is in critically short supply in Poland so the increase in consumer satisfaction and labor incentives should be substantial. Construction has a direct and indirect hard currency import content of only 7.5 percent of the gross value of output. Once built, residential repair, maintenance, and administration have a hard currency import cost of only 1 percent of the value of these activities. Unfortunately, housing construction must compete for resources with so-called productive investment. In Marxist economic accounting, housing is considered unproductive, so Polish planners are unlikely to exploit this option. As a result, consumer satisfaction and labor motivation will continue to depend on the availability of consumer goods, particularly food. 25X1

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Energy Requirements

The Recovery Program provides meager information on energy balances for 1986-90. Hard coal production in 1990 is "provisionally estimated" at 195 million tons—2.2 million barrels per day oil equivalent (bdoe)—slightly above the 191 million tons produced in 1985. Lignite production is expected to increase substantially from 52.3 million tons in 1985 to 74 million tons (0.3 million bdoe) by 1990. Trade projections in the program call for energy exports to centrally planned economies to increase only 0.9 percent per year in 1986-90 with imports rising 2.0 percent per year. Projections of energy trade with market economies were omitted from the Recovery Program. 25X1

Polish energy plans flesh out the production projections in the Recovery Program. Natural gas and hydroelectric power are each to provide nearly 0.1 million bdoe, and nuclear power is to supply almost 0.2 million bdoe. In addition, gross energy imports are expected to total 0.7 million bdoe. This yields an overall supply of energy by 1990 of 3.5 million bdoe—just over 97 percent of the domestic energy requirements projected by POLGNP to meet the Recovery Program's targets. The plan balances, however, do not take account of projected energy exports. Even flat energy exports in 1986-90 would add about 0.5 million bdoe to overall Polish energy requirements, leading to a 15-percent shortfall in energy supplies by 1990. The small growth in exports called for in the Recovery Program would widen this gap to 20 percent or more. 25X1

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The Poles are counting on improvements in energy efficiency and conservation to make up the shortfall, but history belies their confidence. The trend in energy productivity of the Polish economy over the

last 15 years has been erratic (figure 6). In 1971-74, energy productivity improved markedly: energy consumption grew by only 14.3 percent compared with a 30.7-percent increase in GNP. In 1975-78, energy consumption increased almost twice as fast as GNP: 25.8 percent versus 13.2 percent. In the crisis years of 1979-82, energy consumption dropped only 0.4 percent despite a 10.2-percent decline in GNP. In 1983-84, GNP recovered 8.5 percent while energy consumption increased very little.

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This pattern cannot be explained by any single cause, but it is related to trends in capital productivity and overall economic efficiency. Transitory developments such as harsh winters and bad weather for agriculture can have an adverse effect on energy efficiency in any given year. The key factor behind a more extended trend, however, is the relative emphasis given by planners to expansion of energy-intensive sectors such as heavy industry, electric power, and transportation.

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POLGNP projects energy requirements to grow faster than GNP under the Recovery Program. The program's emphasis on heavy industry and the implicit need to expand electric power generation and transportation to meet growth targets seem likely to reverse the trend of improved energy productivity in 1983-84. Our calculations show that the 3.8-percent annual GNP growth implicit in the program would require energy consumption to increase by 4.8 percent per year.

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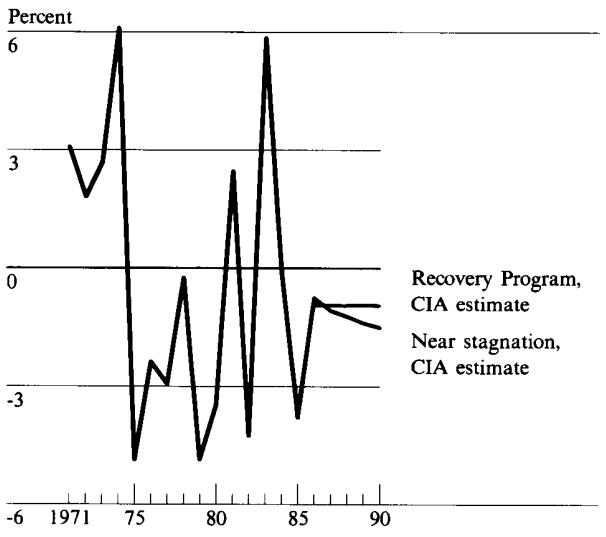
Under the Recovery Program's provisions, the Poles plan to increase the use of coal—their only significant domestic source of energy. But factors affecting both supply and demand are likely to limit the annual increase in coal consumption to at most 4 percent, forcing other energy sources to increase their share in total energy use. On the supply side, Poland must make large investments in mines, processing facilities, and transport capacity to boost coal output by even 4 percent; still greater expansion probably would exceed the resources available to Warsaw. On the demand side, the Recovery Program's growth targets would require particularly rapid expansion of oil-consuming

Figure 6
Poland: Growth in Energy Productivity, 1971-90



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sectors such as truck transport and small-scale electric generating capacity. Poland has increased domestic use of coal by 4 percent or more in only four years since 1970, and maintaining this rate of increase over a five-year period would be difficult.

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Our model projects primary electricity consumption—hydro and nuclear generation less net electricity exports—to be essentially constant in 1986-90 at a level 18 percent above the 1971-83 average. This allows for both some expansion in capacity and restriction of exports to meet domestic needs. We project thermal electricity generation, which is based mostly on coal, to grow by 7.5 percent in 1986-90 to support the Recovery Program's targets.[4] Gas consumption could grow rapidly—about 5.9 percent per

[4] Thermal electric generation is not included in energy balances since the energy is already included in the fuel burned to produce electricity.

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year. The limit on gas consumption is not availability of Soviet deliveries but the ability of the Polish economy to switch from oil to gas. Our model implicitly includes these limits for each sector of the economy based on past abilities to switch.

Oil requirements pose the major need for additional energy imports and could prove to be the key energy constraint on the Recovery Program. Even with the projected increases in gas and electricity usage, oil consumption would have to increase 8.2 percent per year to 0.6 million barrels per day by 1990, 162 percent of its previous peak in 1980. Poland's ability to acquire the needed oil depends on availability of soft currency oil from the Soviets and world oil prices. Assuming there will be no additional soft currency deliveries above the 0.3 million barrels per day currently supplied by the USSR, the extra 0.3 million barrels per day required by 1990 would cost $1.6 billion at $15 per barrel. By comparison, Warsaw purchased only 34,200 barrels per day on the world market at an estimated cost of $350 million in 1985.

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Exports

The Recovery Program calls for substantial growth in exports to both hard currency and soft currency markets. The hard currency trade surplus is to rise from a projected $1.5 billion in 1985 [5] to $2.1-2.7 billion by 1990 on the strength of a 6-percent average annual growth in hard currency exports. The program anticipates that hard currency exports of foodstuffs and electrical machinery will grow most rapidly, while fuels and energy will reduce their shares in total hard currency exports. Projected average annual growth of 6.5 percent in soft currency exports is planned to reduce the trade deficit with socialist countries from 600 to 800 million rubles in 1986 to near zero between 1988 and 1990.

The Poles assert in the 1984 Recovery Program that the export-led improvements in both socialist and nonsocialist trade balances can be covered by the widening gap between national income produced and national income distributed. The former is projected to grow at 4.3 percent per year, and the latter at 3.9 percent. Nevertheless, fulfillment of the Recovery Program's export targets rests on several heroic assumptions:

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- Exports of electrical machinery are to increase the most in both socialist and nonsocialist trade. This assumes that the electrical machinery sector can accommodate both rapidly growing exports and rising investment in the domestic economy. The increased machinery exports to nonsocialist countries assumes—too optimistically, we believe—that less developed countries will want to increase their investment, will have the hard currency to pay for machinery imports, and will find the quality of Polish machinery competitive with the exports of newly industrialized countries such as Korea, Taiwan, and Brazil.

- Poland's second fastest growing export for hard currency is to be food. Growth of this export, however, depends on continued good performance in agriculture and assumes, incorrectly we believe, that the population will not clamor for more food consumption.

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- Exports of fuels and power, largely coal, are slated to grow the least. This is probably a wise decision given the prospects for growing supplies of fuels on international markets at lower prices over the next several years.

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An important issue not treated in the Recovery Program is the import content of exports. The Poles release only limited anecdotal information on this relationship, but our input-output analysis indicates that the product categories designated for high-export growth require a fairly high level of imports. It is difficult to determine the import content of products because much of that content is often indirect. For example, imported chemicals used in metal processing for machinery contribute indirectly to the import content of exported machinery. Moreover, the import

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[5] The actual surplus in 1985 was $1.1 billion.

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content of production measures only current inputs. The imported share of the capital stock used in export production by each sector is not measured.

The greatest difficulty in forecasting the import requirements of export industries is allowing for the impact of capacity utilization both in the sector in question and in the other sectors that send inputs to it. The import content of domestic products tends to be higher during periods of rapid growth as imports rise to ease shortages and break bottlenecks caused by sectors straining to meet high-production targets. If, for example, only 15 of a sector's 100 plants require a high level of imported inputs because of their equipment, the sector's imports may be low until its capacity utilization exceeds 85 percent. Much of the apparent reduction in import dependence in Polish industry since the onset of the financial crisis is a result of the decline in capacity utilization. The Poles have reported that some of their highly import-dependent sectors have utilization rates as low as 60 percent. As output levels recover, imports, especially those to support exports that must be of higher quality than goods sold domestically, will rise even faster.

Import Requirements

Warsaw's underestimation of its needs for investment, food consumption, and energy plus the large import requirements of its main export industries mean that Poland would require much higher growth in both hard currency and soft currency imports than the Recovery Program foresees. The Recovery Program calls for hard currency imports to grow 4.5 percent annually in 1986-90 and soft currency imports to increase by 3.5 percent annually. POLGNP projects that hard currency imports would have to grow about 7.5 percent per year with emphasis on oil, metals, processed foods, and agricultural products. Growth in soft currency imports would average 6.5 percent per year with emphasis on gas, metals, machinery, and light industrial products.[6] The largest differences between the Recovery Program's projections and our projections of import requirements center on metals and light industry products for soft currency imports. The program is silent on the product composition of hard currency imports. Imports would have to grow faster than GNP because they are needed to break bottlenecks as capacity utilization rises, particularly as the more import-dependent plants are used more intensively. Polish planners apparently have omitted these factors in forecasting their import needs.

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The divergence between import requirements projected by POLGNP and by the Recovery Program results from different projections of change in "import productivity," that is, the change in the ratio of GNP to imports. The Recovery Program's optimistic assumptions about import productivity are the keystone upon which the goals of moderate growth and improving trade performance rest. If those assumptions are off by only a few percentage points, the program is infeasible. The economy either would need more imports to meet the program's targets for GNP growth or economic growth would have to fall to be consistent with hard currency and soft currency trade balances.

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The Recovery Program's implicit projections of import productivity seem much more implausible for soft currency imports than hard currency imports. Our analysis indicates a decline of about 2.5 percent per year in the productivity of soft currency imports; the Recovery Program implies annual increases rising from 9.25 percent in 1986 to 13.5 percent in 1990 (figure 7). The Poles themselves do not calculate these percentages; they are implicit in the Recovery Program. The Poles evidently projected a slow growth in soft currency import needs to minimize the apparent burden of the Recovery Program on Poland's soft currency trading partners—particularly the USSR. Such productivity performance is virtually without precedent at least as far back as 1970. Since that year, the productivity of soft currency imports has increased only four times: by 6.4 percent in 1975, by 1.1 percent in 1981, by 4.8 percent in 1982, and by 0.6 percent in 1983.

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Our analysis shows the productivity of hard currency imports dropping 3 to 4 percent annually while the Poles project a decline of only 0.25 percent (figure 8). Both these estimates are within the range of historical experience. The productivity of hard currency imports

[6] See table 2 in appendix for more details

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Figure 7
Poland: Growth in Productivity of Soft Currency Imports, 1971-90

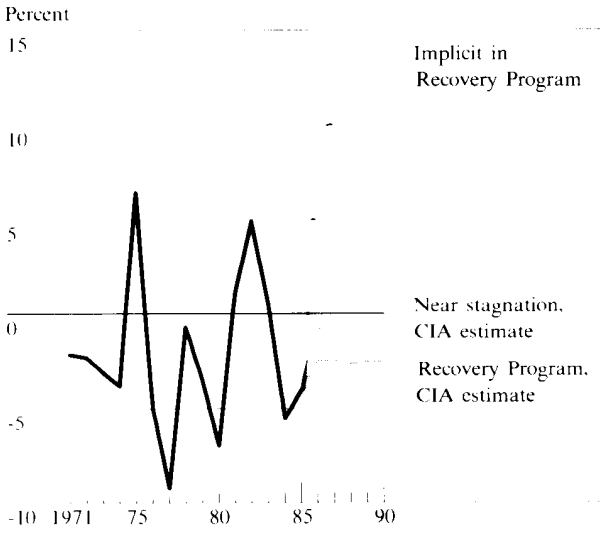
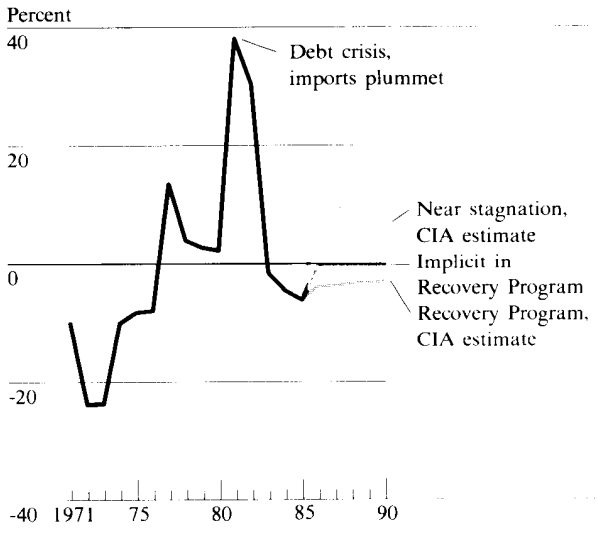


Figure 8
Poland: Growth in Productivity of Hard Currency Imports, 1971-90



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is extremely volatile, ranging from a high of 38.1 percent in 1981 to a low of −23.7 percent in 1972. Given this range, our projection and that of the Polish Recovery Program are quite close. The greater pessimism in our analysis hinges on three factors:

- Many of the opportunities to reduce hard currency import dependence have probably been used up. Further reductions will be increasingly difficult, and projections cannot simply extrapolate recent performance even at the sector level.

- Much of the recent good overall performance can be attributed to good weather for agriculture and shifts in the composition of GNP away from uses most dependent on hard currency imports, investment in particular. Our projections are based on only average weather for agriculture and an increase in the share of GNP going to end uses important for the growth projected in the Recovery Program—in particular, investment to replace the obsolete capital stock.

- Our analysis places a greater emphasis on the overall level of demand for each sector's output and thus projects a growing need for hard currency imports to break bottlenecks as GNP growth accelerates.

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Recovery Program Infeasible

By projecting import requirements in excess of those foreseen by the Recovery Program, POLGNP demonstrates that Warsaw cannot meet all its basic objectives—a moderate rate of economic growth in 1986-90, restoration of at least a minimum level of creditworthiness with the West, and balanced trade with the USSR. The Poles, in effect, have drafted two separate plans—one for domestic growth and the other for external performance—but have failed to link these together. Although our baseline projection shows the program to be infeasible, we are actually

incorporating very optimistic assumptions in an attempt to make the domestic and external plans consistent. We assume that:

- Half the required gross additions to the capital stock can be replaced by improvements in capital productivity beyond those expected, according to past performance.
- There is no labor unrest, although per capita consumption of food, especially meat, remains well below historical levels.
- At least average conditions for agriculture exist during the rest of the decade.
- No difficulties develop in increasing exports, even sales of machinery to developing countries.
- There is no further deterioration in the terms of trade.

Any one or more of these assumptions could well prove incorrect, depressing trade performance still further from our baseline. (

Our baseline projection shows that under Warsaw's growth targets the hard currency trade surplus would increase from $1.4 billion in 1984 to only $1.8 billion in 1990 in contrast to the Poles' estimate of $2.1-2.7 billion.[7] The surplus projected by POLGNP would leave Poland's payment capacity well short of the level needed to cover all interest payments on its debt, let alone repayments of principal. Warsaw's inability to achieve a balanced current account would force Western creditors to continue rescheduling both principal and most interest payments and would discourage the resumption of voluntary lending sought by Warsaw to increase its import capacity.

The shortfall in Poland's soft currency trade—in effect its trade balance with the USSR—is even greater. While Moscow's objective is to stem, if not reverse, the net flow of resources from the USSR to Poland, POLGNP projections show that Poland's soft currency trade deficit would rise from 600 to 700 million rubles in 1985 to 1.1 billion rubles by 1990. This would run counter to the Recovery Program's target to balance trade by 1988, the goal that was set by the trade protocol for 1986-90.

[7] The Poles increased their estimated 1990 surplus to $3 billion assuming that their export prices will rise by 5.9 percent annually and their import prices by 4.5 percent.

Outlook

The infeasibility of the Recovery Program means that either the Poles must sacrifice their expectation of sustained, moderate growth or Western creditors and the Soviets must temper their demands for net resource flows from Poland. The range of trade-offs between growth and trade performance is potentially limitless. However, POLGNP demonstrates that the range of likely outcomes is limited when bounded by the presumed unwillingness of the West and the USSR either to push the Polish economy into decline or to finance a large flow of imports. 25X1

Because hard currency import requirements do not change proportionally with changes in GNP growth, import levels in our simulation initially fall rapidly with relatively small decreases in growth from the Recovery Program's targets. A critical point for the trade-off between payment capacity and economic growth occurs near a rate of 1-percent growth in GNP with a potential hard currency surplus that could reach $3.5 billion by 1990. Slowing growth below 1 percent adds progressively less to payments because the savings in imports become progressively smaller. At the same time, the risk of economic collapse with complete loss of payment capacity grows. GNP growth above 1 percent, in turn, requires a progressive acceleration in the growth of hard currency imports and eventually turns the trade surplus into a deficit. 25X1

If we assume economic growth in the range of 1-1.5 percent, the level of hard currency earnings still is short of all principal and interest payments due on Poland's rescheduling agreements. These payments rise from $2.5 billion in 1986 to over $6 billion in 1990. The earnings, however, could be roughly enough to cover interest payments. Warsaw could not reduce its debt, but, by balancing the current account, the Poles could finally halt the increase in their debt. This seems the maximum Western creditors can expect to get. From Warsaw's viewpoint, balancing the current account over a few years might eventually

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restore some measure of creditworthiness and in time strengthen the willingness of Western creditors to extend new credits.

The tenor of recent negotiations between Poland and its Western creditors suggests that the banks and governments want to obtain the largest sustainable net flow of payments possible rather than finance the imports needed for faster growth. While the creditors are resigned to extending more debt relief to Poland, the terms negotiated for 1986 will require Warsaw to pay the creditors $2.5-3.0 billion, and the creditors expect to get even more payments in the future. The level of payments is roughly $1 billion more than Warsaw can afford under the Recovery Program's growth targets and is roughly consistent with GNP growth of 1-1.5 percent.

Warsaw is counting on new credits from Western governments and eventual drawings on the International Monetary Fund (IMF) and the World Bank to boost its import capacity toward the levels required by the Recovery Program. Warsaw's expectation of some $1 billion annually in new credits, however, seems extremely optimistic. A few West European governments have pledged less than $100 million in new loans over the past year, and enthusiasm among other official lenders is scant. Current IMF lending limits are lower than Warsaw has projected, and the creditors will probably insist that this money be used for additional debt service payments rather than more imports. Warsaw's future access to World Bank loans is uncertain and, if approved, will probably result in less money than the Poles hope. The continuing credit constraint on imports seems likely to hold Polish economic growth in the range of 1-1.5 percent in 1986-90.

Because of the Polish economy's dependence on socialist imports, the USSR has little prospect of reducing its economic support for Warsaw. In fact, Poland's deficit with the USSR could be higher under slow growth than under the Recovery Program's targets. With slow growth in the domestic economy, Poland's capacity to expand soft currency exports would be squeezed toward zero while its soft currency import requirements would continue to rise by about 1.4 percent annually. Under the Recovery Program's growth targets, both exports and imports would rise about 6.5 percent annually. Cutting back deliveries to Poland would not benefit the USSR because it would depress Poland's export capacity and could risk economic collapse. The Soviets probably could press the Poles to redirect some exports from the West to the USSR, but this would limit Warsaw's ability to acquire needed Western goods. Even given some scope for a trade-off between the West and the USSR, Moscow will probably continue putting more into Poland than it will get back. 25X1

Implications

The POLGNP projections indicate little easing of the problems posed to the West, the USSR, and the Jaruzelski regime by Poland's economic and financial weaknesses. Warsaw's continuing failure to implement rigorous adjustment policies and effective reforms leaves the country's economic recovery dependent on the willingness of Western creditors and the USSR to provide more economic support. The West would have to extend more debt relief than it is willing to do and the Soviets would incur larger deficits than they are prepared to tolerate; in short, neither side seems willing to pay the price required to lift the Polish economy above stagnation. 25X1

Poor economic performance will limit gains in living standards needed to ease tensions between the regime and the population. Polish authorities probably will continue to increase nominal incomes; but failure to meet rising consumer demand with increased supplies will, in our view, leave the regime saddled with a sullen and unproductive labor force. Although Warsaw's use of force and intimidation may maintain calm, the mere absence of open hostility alone is unlikely to improve labor productivity, and continued economic problems will erode the longer term political stability that the regime is trying to achieve. 25X1

US and other Western creditors will have to wrestle with Poland's debt problem for years to come. The most they can expect is a small increase in Poland's

Reform and Economic Efficiency

In 1982, the regime adopted an economic reform program designed to encourage enterprise initiative and to expand the use of financial instruments—such as interest rates and bank credits—in place of administrative controls. Firms were given increased authority to set wages and prices, to make decisions on investments and product lines, and to retain hard currency earned from exports. As part of the program, the government consolidated several ministries, reduced central staffs, and allowed enterprises a larger role in setting their own plans. Banks received increased power to extend credits and to declare enterprises in default.

The regime's halfhearted implementation of reform, however, often did little more than cause new disruptions. Enterprises that took advantage of some reform provisions frequently raised prices, wages, and investment much more than planners had projected. Under the reform plan, competition and profitability criteria would have limited such increases. Although the regime subsequently put some restrictions on price increases, it did not tighten wage and investment regulations. Reform measures also did not induce enterprises to use labor and other inputs more efficiently. According to the Polish press, many enterprises failed to reduce excessive manpower and material use because these costs continued to be added to product prices.

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We have closely monitored Polish economic performance to identify the overall effects of the reform program on economic efficiency. For each major input into the production process—capital stock, labor, energy, hard currency imports, and soft currency imports—a significant portion of the apparent gains in productivity is not a result of actual improvements in efficiency but to changes in the composition of Polish GNP, particularly the drop in the share of investment in GNP and of coal in exports. When these effects are accounted for, the picture of Polish economic efficiency looks much bleaker. We conclude that the Polish reform effort thus far has not resulted in significant lasting improvements in efficiency. Furthermore, given the lags between decisions to reform, implementation, and effects on efficiency, we doubt that even a stronger commitment to reform would substantially alter Polish economic performance over the next few years.

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hard currency payment capacity that still will be inadequate to reduce financial gaps. Even this gain rests on optimistic assumptions about export prospects, improvements in economic efficiency, and Warsaw's willingness to give priority to debt service over increases in imports. Even with the maximum projected payment capacity, creditors will have to continue rescheduling Poland's obligations and will face increasingly complicated disputes over sharing Warsaw's limited payments. The Poles will go slow on making the minimum payments required under their various rescheduling agreements and probably will try to play creditors off against each other by offering payments to those willing to extend new credits.

Moscow undoubtedly hopes that its emphasis on modernization, discipline, and tighter management throughout CEMA will pay off in increased exports from Poland and elimination of the Polish trade deficit with the USSR. In our judgment, however, the resource requirements for even minimal growth in exports almost certainly ensure that Poland will remain a drain on the Soviet economy even as Warsaw directs net payments to the West.

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Apart from the cost to the USSR, the Polish turn to the East is likely to remain more rhetoric than reality because of the link between hard currency imports and Polish growth. Warsaw will continue to see the West as vital to its hopes for economic recovery. Poland's decision to make at least small payments to

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creditors and its interest in membership in the IMF clearly reflect the regime's desire to improve its credit rating and access to Western imports. The West, in turn, faces the questions of how much it is willing to pay for Polish economic recovery and whether it is possible to ensure that Poland makes the best possible use of these resources.

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Appendix

Details of the Polish economy, as described by the POLGNP input-output model, are summarized in the following tables. (U)

Table 1 presents growth and productivity statistics for key inputs. Historical figures and projections for the healthy growth and stagnation scenarios are presented together for comparison. (U)

The remaining two tables depict the likely trade-offs in Poland between domestic economic activity and import needs under two alternative scenarios: meeting the Recovery Program's healthy growth targets and falling back to the modest growth rates of a stagnating economy. These tables show that a stagnating Polish economy is not simply a scaled-back version of a growing economy; it is structurally different with a different pattern of import dependence.

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Table 1
Requirements for Capital, Labor, Energy, and Imports: Average Annual Growth Rates

Percent

	Capital Stock	Employment	Energy Use	Nonsocialist Imports	Socialist Imports
Precrisis, 1971-78					
Growth	6.4	1.5	4.6	15.3	7.8
Productivity	−1.3	3.5	0.4	−8.9	−2.6
Crisis, 1979-82					
Growth	4.7	−0.2	−0.1	−17.1	−1.4
Productivity	−7.1	−2.5	−2.6	17.5	−1.2
Recovery, 1983-85					
Growth	2.7	0.5	2.7	7.7	6.6
Productivity	0.6	2.8	0.6	− 4.0	−3.0
Postrecovery prosperity, 1986-90 [a]					
Growth	6.0 to 6.1	1.0 to 1.1	4.8 to 4.9	7.5	6.5
Productivity	−2.0 to −2.1	2.7 to 2.8	−1.0	−3.0 to −3.5	−2.5
Postrecovery stagnation, 1986-90 [b]					
Growth	4.9 to 5.0	0.5 to 0.6	1.6 to 1.9	−6.5 to −7	1.0 to 1.5
Productivity	−4.5 to −4.6	−0.3 to −0.4	−1.5 to −1.6	7 to 7.5	−1 to −1.5

[a] 3.8-3.9 percent GNP growth.
[b] 0-.5 percent GNP growth.

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Table 2
Likely Adjustments in the Composition of GNP and Imports Under the Recovery Program Targets, Second Half of the 1980s

Products Group	General Comment	Domestic Value-Added	Imports From Market Economies	Imports From Socialist Economies
Domestic production and total imports	Growth holds at 4.4 percent per year on average, with slightly more rapid growth later in the period.	GNP grows at 3.8 percent early in period and accelerates to 3.9 percent by 1990.	Hard currency imports grow almost 8 percent early in period. Growth slows to 7.2 percent by 1990.	Growth hovers around 6.5 percent with peak in midperiod.
Energy	Overall energy requirements will grow by 5.8 percent per year, 2 percentage points faster than GNP.	The most rapidly growing domestic energy sector will be power generation growing at 7.5 percent per year. The domestic coal industry would come in second at 4.7 percent, domestic gas next at 4.3 percent, and domestic oil last at 1.5 percent. These optimistic figures assume that depletion can be temporarily counteracted by expensive recovery techniques and luck.	Poland's dramatic reduction in hard currency energy—oil—imports since 1980 would be reversed, but these imports could grow by only 2.8 percent per year, a point slower than GNP.	Soviet export policies would have to support Polish soft currency energy imports—largely oil but with gas gaining share—growing at 6.5 percent per year.
Metals	Metals requirements will probably grow by 4.5 percent per year.	On the domestic side, nonferrous metals will increase most rapidly, averaging almost 9 percent per year. Metalworking would grow at 4.3 percent, while ferrous metals would barely match overall GNP growth at 3.8 percent per year.	Metal imports from nonsocialist trading partners would have to increase about 4.8 percent per year.	Metals imports from socialist trading partners would lag both domestic and nonsocialist sources, increasing less than 2 percent per year.
Machinery and construction	Driven by the high investment rate and the push for machinery exports, the requirements for machinery and construction would increase over 6 percent per year, with much of the growth satisfied by imports.	Value added in electrical machinery will increase minimally in response to the increased demand—only .5-.75 percent per year. General machinery would do little better, growing only about 1 percent per year. Precision instruments would grow by a robust 4.6 percent per year, and transport equipment by 4.7 percent. Construction, with minimal opportunity for import substitution, would grow by 7 percent per year. All these branches slowly lose ground to imports as time passes.	Requirements for machinery and construction from market economy trading partners would probably increase by almost 10 percent per year.	Reliance on socialist trading partners for machinery and construction would grow by 8.4 percent per year.

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Table 2 (continued)

Products Group	General Comment	Domestic Value-Added	Imports From Market Economies	Imports From Socialist Economies
Chemicals	Overall, chemicals will have to increase at 6.2 percent per year to support the Recovery Program.	The domestic chemicals sector will lose share, growing at only 3 percent per year.	Hard currency chemical imports would grow at 7.5 percent per year, more than twice the rate of domestic chemicals but in line with overall hard currency imports.	Poland would depend heavily on socialist trading partners to satisfy its growing chemical needs. Imports would increase 9.4 percent per year, almost half again as fast as overall socialist imports.
Mineral products	Mineral product requirements would increase at 3.8 percent per year—in line with GNP.	Domestic construction materials increase at more than 2.9 percent per year. Glass and ceramics grow at 6.8 percent early in the period and accelerate to 7.5 percent by 1990 as they replace imports.	Hard currency imports grow at only 1.8 percent per year.	Socialist imports remain flat over the period.
Wood and paper products	Requirements for wood and paper will increase at almost 6 percent per year.	Domestic wood products register growth of almost 7 percent per year. In contrast, domestic paper would grow at only 2.7 percent per year.	Hard currency imports remain negligible.	Socialist imports would grow at 5.5 percent.
Light industrial products	With slow growth in consumption and little reliance on light industry exports, this product group will likely grow only 1.7 percent per year.	Domestic textiles would grow only about 1.2 percent per year; clothing, 1.7 percent; and leather products, 2.1 percent.	Hard currency light industrial imports remain flat.	Light industrial imports from socialist trading partners would grow at almost 3 percent per year.
Processed foods	Overall, processed foods would grow 4.8 percent per year.	The domestic processed foods industry would increase only 4.2 percent per year, a respectable growth rate but still losing share to imports.	Processed foods imports would grow at almost 6 percent per year.	Imports from socialist trading partners would grow somewhat slower, 5.6 percent per year.
Other industrial products	Requirements for miscellaneous industrial products would increase 4.3 percent.	Domestic production, growing at 5.4 percent, will meet the increase in requirements and substitute for some imports.	Imports from market economies will remain flat.	Imports from socialist countries would drop by 0.9 percent per year.

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Table 2
Likely Adjustments in the Composition of GNP and Imports Under the Recovery Program Targets, Second Half of the 1980s (continued)

Products Group	General Comment	Domestic Value-Added	Imports From Market Economies	Imports From Socialist Economies
Agricultural products	The availability of agricultural products from all sources will increase a minuscule 1.3 percent per year.	The slow growth will be concentrated in crops, which, with normal weather, will increase only .75 percent at the beginning of the period and slow to only .5 percent growth by 1990. Agricultural services grow faster, but only 2.6 percent at the beginning to 1.7 percent at the end. Animal products growth drops from 3.2 percent early in the period to 1.9 percent by 1990.	The slack will have to be picked up by hard currency imports with over 10 percent average annual growth.	Imports of agricultural products from socialist trading partners could decline at rates exceeding 6 percent per year as even modest domestic output growth substitutes for the quality and mix of agricultural products available from the USSR and East European neighbors.
Forest products	Requirements for forest products increase a half point slower than GNP, that is, at about 3.3 percent per year.	The entire increase in requirements is met by domestic production growing at 3.3-3.4 percent per year.	Forest product imports remain negligible but grow about 0.5 percent per year.	Forest product imports remain negligible.
Other traded products and services	Overall, this miscellaneous category will grow about 4 percent per year—almost in line with GNP.	Miscellaneous material products and services grow rapidly—almost 5 percent per year. Miscellaneous nonmaterial products and services grow at only 1.5 percent per year.	These imports continue to hover near zero.	Already near zero, these imports could decline slightly.

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Table 2 (continued)

Products Group	General Comment	Domestic Value-Added	Imports From Market Economies	Imports From Socialist Economies
Nontraded services	Overall, nontraded services must grow at 5.3 percent per year to support GNP growth of 3.8 percent.	The greater share of that growth must be in domestic transport and communications, growing annually by 8.6 percent. Next comes trade and distribution, growing 5.8 percent per year to handle the increasing number of transactions in a growing economy. Housing, tied to population trends and consumer welfare policies rather than growth, could underperform GNP with a 3.3 percent annual growth rate. The government's health and human services could grow at 4.9 percent, investment in human capital by over 3 percent, and administration and military by 1 to 1.5 percent.		

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Table 3
Likely Adjustments in the Composition of GNP and Imports Under Economic Stagnation, Second Half of the 1980s

Products Group	General Comment	Domestic Value-Added	Imports From Market Economies	Imports From Socialist Economies
Domestic production and total imports	Near zero growth in a stagnant economy, but significant shifts in the composition of GNP and imports occur.	GNP grows on average only a fifth of a percentage point per year. Growth is greatest in first year or two as domestic production replaces some imports, drops to one-half the average after 3 years, then accelerates slightly as long-term efforts to substitute domestic production for imports begin to take effect.	Overall declines of 6-7 percent per year average as more substitutes are found for hard currency imports. Declines are highest—9 percent—in the beginning of stagnation as imports to break bottlenecks are no longer needed, drop to 5 percent after a couple of years, then accelerate to 6 percent as long-term substitutions take effect.	Overall growth of 1.5 percent per year average with highest growth—close to 2 percent in early part of the period. Growth slows monotonically to 1 percent by end of period, as opportunities to substitute for hard currency imports are exhausted.
Energy	Overall energy requirements will grow—probably 1-2 percentage points faster than GNP.	The driving force in the domestic energy industry is likely to be electric power as electrification of the economy continues. Growth rates 2-3 percentage points faster than GNP may be expected. Coal—a major source of energy for electricity generation—will also grow rapidly, 1-2 percentage points faster than GNP. The small domestic oil and gas industry, in contrast, will lose ground due to declining production. If attempts are made to maintain production, costs will rise sharply. Growth 2 percentage points less than GNP would be good performance.	Poland has dramatically reduced its hard currency energy—oil—imports since 1980. These declines could continue further given sluggish domestic growth, continued electrification, increased energy availability from the Soviet Union, and successful conversion to Soviet gas where feasible.	Unless Soviet energy export policies change dramatically, Polish imports—largely oil but with the share of gas increasing—will probably grow 2-3 percentage points faster than GNP.
Metals	Tied closely to investment, metals will probably lose ground with growth rates as much as 3-4 percentage points below GNP.	The stagnation or decline will be concentrated in ferrous metals and metalworking. Nonferrous metals in contrast will probably maintain their share of GNP.	Polish hard currency imports of metals dropped by an average 15 percent per year, 1977-83. Further declines of 15 percent per year could occur if the economy, particularly investment and machinery exports, is stagnant.	Soft currency metals imports will show about a 3-percent decline.

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Table 3 (continued)

Products Group	General Comment	Domestic Value-Added	Imports From Market Economies	Imports From Socialist Economies
Machinery and construction	Tied closely to investment and machinery exports, machinery and construction will also lose ground in a stagnant economy with growth rates 2-3 percentage points below GNP.	Electrical machinery could potentially suffer the most with a growth rate 7 percentage points less than the GNP rate. Construction, without import substitutes, is likely to suffer the least with growth rates about .5 percentage point below overall GNP growth. In between lie the other equipment and construction sectors: transport equipment with growth 4 percent below GNP; general machinery with growth rates 5-6 percentage points below GNP growth; and precision instruments with growth about 3 percentage points below GNP growth.	Hard currency machinery imports will probably decline substantially in a stagnant economy with growth rates 5-6 percentage points below GNP growth rates.	Soft currency machinery imports, like domestic construction, apparently have few substitutes. Their growth rate is likely to be only about .5 point below GNP growth. They will gain share in overall machinery sales.
Chemicals	Chemicals as a group will grow roughly as fast as overall GNP.	Domestic chemicals could lose some share with growth rates up to 1 percentage point below GNP growth rates.	Hard currency chemical imports will probably lose share; growth rates could be 5 percentage points below GNP growth rates.	Soft currency chemical imports will probably gain share with growth rates as much as 5 percentage points above GNP growth rates.
Mineral products	Tied closely to construction and therefore investment, mineral products will lose ground in a stagnant economy with growth rates 2-3 percentage points below GNP growth.	Stagnation will be confined to the construction materials sector. Glass and ceramics will probably grow 1 percentage point faster than GNP.	Substitution away from imports of mineral products will probably continue at a brisk pace. Growth rates 7 percentage points below GNP growth rates may occur.	Mineral product imports from socialist economies could drop even faster with growth rates 8 percentage points below GNP growth rates.
Wood and paper products	Linked to consumption of durables and helped by substitution for other materials, wood and paper will grow 1-2 percentage points faster than GNP.	Any growth will be concentrated in wood products with growth rates 1-2 percentage points above GNP. Paper will probably decrease—at rates 2 percentage points less than GNP.	Imports from market economies dropped to negligible amounts in 1981 and will remain negligible.	Imports from socialist economies wll probably grow substantially—by as much as 4 percentage points per year above GNP growth rates.

Table 3
Likely Adjustments in the Composition of GNP and Imports Under Economic Stagnation, Second Half of the 1980s (continued)

Products Group	General Comment	Domestic Value-Added	Imports From Market Economies	Imports From Socialist Economies
Light industrial products	This product group will probably lose share with growth as much as 2 percentage points below GNP growth rates.	Textiles will probably grow at rates 2-3 percentage points below GNP; clothing at 1-2 percentage points below GNP; and leather goods .5-1 percentage point below GNP.	Imports from market economies also will probably grow at rates almost 3 percentage points below the GNP growth rate.	Imports from socialist economies will probably grow at rates 2-3 percentage points below the GNP growth rate.
Processed foods	This product group will probably grow 1-2 percentage points faster than GNP as consumers try to correct the imbalances in their overall consumption because food products suffered the most in the financial crunch.	Domestic food processing will probably grow only about .5-1 percentage point faster than GNP, leaving a gap to be filled by imports.	Imports from market economies could grow 8-9 percentage points less than GNP as substitutes for hard currency imports are found. Such a decline would exceed the overall decline in hard currency imports.	Imports from socialist countries could grow 10-11 percent per year (even if GNP is stagnant) and account for over 10 percent of imports from socialist countries by the end of the decade. Such growth would be consistent with the 9 percent average annual growth of 1978-82.
Other industrial products	This group of diverse products finds uses throughout the economy. Its growth should roughly match the growth of overall GNP.	Domestic production will probably grow about 2 points faster than GNP and substitute for imports.	Imports from market economies could drop by a third by the end of the decade with domestic economic stagnation.	Imports from socialist countries could be cut almost in half by the end of the decade if the Polish economy stagnates.
Agricultural products	Despite the backlog of pent-up demand for agricultural products, growth is unlikely to exceed .5 percent per year—all of the growth in domestic crops.	Crop output could increase .5-1 percent per year, but animal products would probably decline by nearly the same percentage due to dependence on hard currency imports of feed supplements, veterinary supplies, and other inputs. Agricultural services are likely to remain flat.	Imports from market economies could decline 3-4 percent per year if domestic crop output can increase only moderately to provide substitutes.	Imports from socialist economies could plummet 6-7 percent per year with moderate growth in domestic crops.
Forest products	Overall, forest products could increase 3 percent faster than GNP growth.	A modest success story: all of that growth will probably be accommodated by domestic production with additional inroads into imports.	Already insignificant, hard currency imports could decline an additional 3-4 percent per year.	Already insignificant, these imports could decline further, 2 percent per year.

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Table 3 (continued)

Products Group	General Comment	Domestic Value-Added	Imports From Market Economies	Imports From Socialist Economies
Other traded products and services	Overall, this miscellaneous category will probably grow 2-3 percentage points faster than GNP.	Miscellaneous material products and services will probably grow 3-4 percentage points faster than GNP. Miscellaneous nonmaterials services, which include financial services, will grow about 1 percentage point faster than GNP.	These imports will continue to hover near zero.	Already insignificant, these imports could decline further by as much as 20 percent per year.
Nontraded services	Overall, this category would likely increase .5 percent per year in a stagnant economy.	Transport and communications, linked to movement of people, goods, and information, would increase roughly in line with GNP. Trade and distribution could register a slight decline. Housing would probably be more robust, increasing more than 1 percent per year faster than GNP. The government's health and human services are likely to gain share at the expense of education, general administration, and the military.		

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